

State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Division of Aquatic Resources  
Honolulu, Hawaii 96813

January 25, 2008

Board of Land  
and Natural Resources  
Honolulu, Hawaii

Request for Authorization and Approval to Issue a Papahānaumokuākea Marine National  
Monument Research Permit to Dr. David Johnston, National Oceanic and Atmospheric  
Administration (NOAA), National Marine Fisheries Service, for Access to State Waters  
to Conduct Cetacean Survey Activities.

The Division of Aquatic Resources (DAR) hereby submits a request for your authorization and approval for issuance of a Papahānaumokuākea Marine National Monument research permit to Dr. David Johnston, National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service, pursuant to § 187A-6, Hawaii Revised Statutes (HRS), chapter 13-60.5, Hawaii Administrative Rules (HAR), and all other applicable laws and regulations.

The research permit, as described below, would allow entry and research activities to occur in the Papahānaumokuākea Marine National Monument (Monument), including the NWHI State Marine Refuge and the waters (0-3 nautical miles) surrounding the following sites:

- Nihoa Island,
- Necker Island (Mokumanamana),
- French Frigate Shoals,
- Laysan Island,
- Maro Reef,
- Gardner Pinnacles,
- Lisianski Island, Neva Shoal, and
- Pearl and Hermes Atoll

The activities covered under this permit will occur from February 1, 2008 through March 31, 2008.

INTENDED ACTIVITIES

Cetacean research activities that are authorized under the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA) are being proposed to take place in the Monument. The purpose of these activities is to gather information on the abundance,

stock structure and distribution of cetaceans in the NWHI, including information to better understand the biology of humpbacks wintering in the Monument. Cetacean research activities would include large vessel surveys (primarily observational), as well as small boat surveys to conduct photo-identification and cetacean biological sample collection. An additional component of this permit would be to further assess the utility of deploying passive acoustic recorders in the Monument to monitor the presence of cetaceans, ship traffic and fishing activities.

Data would be collected during research vessel surveys using line-transect methodology for the estimation of population abundance by species/stock. The vessel, NOAA Ship OSCAR ELTON SETTE, would traverse predetermined tracklines at a constant speed of roughly 10 knots while marine mammal observers searched the area with binoculars.

Small boat surveys would occur daily for the duration of the project, weather permitting. Data on the location, species, group size, and behavior of small cetaceans would be collected during each encounter by two observers. Photo-identification activities would be conducted from small boats using Digital Single Lens Reflex (DSLR) cameras and telephoto zoom lenses. Generally, large whales would be approached within approximately 15-20 m. Smaller animals, such as delphinids, would be approached within approximately 5-10 m. The collected photographs would be used to estimate abundance, document movements, scarring rates and in some cases (e.g., spinner dolphins) estimate vital parameters such as survival and calving rates. Photo-identification studies are expected to be most useful for island-associated (or otherwise localized) stocks and migratory species exhibiting site fidelity. They would also be used for stock identification.

Cetacean biological sample collection would occur opportunistically during small-boat and large-vessel surveys using biopsy sampling (skin/blubber collected by projectile dart) or collection of sloughed skin or feces. No known injuries or other significant effects of this sampling have been observed during the two decades that SWFSC/PIFSC has conducted this type of sampling. Contact with the animals would be limited to approximately 45 minutes during this activity. During any single encounter, no more than five biopsy sample attempts per individual would be made. If signs of harassment such as extreme rapid changes in direction, prolonged avoidance through diving and other behaviors are observed from an individual or a group, the biopsy activities would be discontinued on that individual or group. Biological samples may be collected from adults and juveniles, but not calves. The monitoring and sampling protocols used for this work are authorized by ESA/MMPA Scientific Research Permits 782-1719 and 774-1714.

A high frequency acoustic recording package would also be redeployed near the summit of Ladd Seamount in 100 to 400m of water. This site lies outside of State waters. The recorded cetacean sounds would provide details on when marine mammals are proximate to Ladd Seamount, as well as aiding in assessing factors that effect cetacean calling rates in the area. The device would also provide information on how useful passive acoustics are for monitoring ship traffic in the offshore regions of the Monument

This research is required to meet stock assessment mandates as set out under the U.S. MMPA, where NMFS is responsible for conducting quantitative population assessments for each stock of cetacean inhabiting the waters of the U.S. EEZ. Additionally, this research would gather baseline information on the presence and seasonality of cetaceans within the Monument.

The activities described above may require the following regulated activities to occur in State waters:

- ☒ Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving monument resource

#### REVIEW PROCESS:

The permit application was sent out for review and comment to the following scientific entities: Hawaii Division of Aquatic Resources, Hawaii Division of Forestry and Wildlife, Papahānaumokuākea Marine National Monument (NOAA/NOS), NOAA Pacific Islands Regional Office (NOAA-PIRO), and United States Fish and Wildlife Service Pacific Islands NW Refuge Complex Office. The Office of Hawaiian Affairs (OHA), and the Kaho'olawe Island Reserve Commission (KIRC) were also consulted.

#### **Comments received from the scientific community are summarized as follows:**

Scientific reviews support the acceptance of this application.

Concerns raised were:

1. If there are plans to distribute research results to the public;
2. The feasibility of collecting samples and photo ID data, given the winter season weather;
3. If female cetaceans with calves would be targeted for biopsy samples;
4. If the Applicant plans to contact the relevant enforcement authorities to share information on the aspects of the project dealing with how useful passive acoustics are for monitoring ship traffic in the offshore regions of the Monument.

#### **Comments received from the Native Hawaiian community are summarized as follows:**

There were no objections to this permit application from the Native Hawaiian community. One reviewer noted that the proposed activities appear to be scientifically

sound, would have no significant impacts on Archeological sites, and would result in knowledge to assist in the management needs of the Monument.

It was recommended that:

5. All samples be returned to the Monument at a location closest to its collection point once the need for the sample is completed.

**Additional reviews and permit history:**

Are there other relevant/necessary permits or environmental reviews that have or will be issued with regard to this project? (e.g. MMPA, ESA, EA) Yes ☒ No ☐  
If so, please list or explain:

- Cetacean monitoring and sampling is authorized by ESA/MMPA Scientific Research Permits 782-1719 and 774-1714

Has Applicant been granted a permit from the State in the past? Yes ☐ No ☒  
If so, please summarize past permits:

- It should be noted that the Applicant is applying for a continuation of research, previously granted to a different applicant, covered under State permit DLNR/NWHI/07R002 issued on March 14, 2007.

Have there been any a) violations: Yes ☐ No ☒  
b) Late/incomplete post-activity reports: Yes ☐ No ☒

Are there any other relevant concerns from previous permits? Yes ☐ No ☒

**RESPONSE:**

1. The Applicant reports that he always strives to have results translated into material for the general public, but much of that process is outside of his direct control as the majority of education and outreach activities are administered and conducted by other NMFS and NOAA staff. DAR staff has learned, through consultation with Monument staff, that there are various ongoing efforts (i.e. websites, press releases) to inform and educate the public regarding activities occurring within the Monument.
2. The Applicant reports that it is highly likely he would be able to conduct the proposed sampling. Both photo identification work and biopsy sampling were successfully conducted in the Monument during the same time last winter.

3. The Applicant reports there would be no biopsy samples collected from female cetaceans with calves, nor from calves themselves.
4. The Applicant has discussed the possible use of passive acoustics for vessel monitoring in the NWHI with Monument staff. When completed, the results would be provided to Monument staff, who could then liaise with enforcement authorities to further explore the utility of this approach.
5. The Applicant reports that returning the samples physically to the Monument would not be feasible. The biopsy samples taken are small (about the size of the eraser on the end of a pencil) and would be frozen in liquid nitrogen. Samples are largely consumed during the process of studying genetics and other molecular/biochemical work. Any remaining sample would be stored by NMFS for future comparative studies.

#### STAFF OPINION:

DAR staff is of the opinion that Applicant has properly demonstrated valid justifications for his application and should be allowed to enter the NWHI State waters and to conduct the activities therein as specified in the application with the following special instructions and conditions, which are in addition to the Papahānaumokuākea Marine National Monument Conservation and Management Permit General Conditions. The following special conditions have been vetted through the legal counsel of the Co-Trustee agencies.

1. This permit is not to be used for nor does it authorize the sale of collected organisms. Under this permit, the authorized activities must be for noncommercial purposes not involving the use or sale of any organism, by-products, or materials collected within the Monument for obtaining patent or intellectual property rights.
2. The permittee may not convey, transfer, or distribute, in any fashion (including, but not limited to, selling, trading, giving, or loaning) any coral, live rock, or organism collected under this permit without the express written permission of the Co-Trustees.
3. To prevent introduction of disease or the unintended transport of live organisms, the permittee must comply with the disease and transport protocol attached to this permit.
4. Tenders and small vessels must be equipped with engines that meet EPA emissions requirements.
5. Refueling of tenders and all small vessels must be done at the support ships and outside the confines of lagoons or near-shore waters in the State Marine Refuge

6. No fishing is allowed in State Waters except as authorized under State law for subsistence, traditional and customary practices by Native Hawaiians.

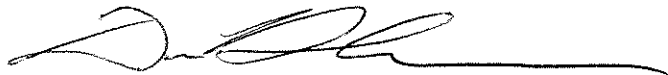
MONUMENT MANAGEMENT BOARD OPINION:

The MMB is of the opinion that the Applicant has met the findings of Presidential Proclamation 8031 and this activity may be conducted subject to completion of all compliance requirements. The MMB concurs with the special conditions recommended by DAR staff.

RECOMMENDATION:

"That the Board authorize and approve, with stated conditions, a Research Permit to Dr. David Johnston, National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service."

Respectfully submitted,



DAN POLHEMUS  
Administrator

APPROVED FOR SUBMITTAL



LAURA H. THIELEN  
Chairperson

## Northwestern Hawaiian Islands Marine National Monument Permit Application

**NOTE:** *This Permit Application (and associated Instructions) are for activities to be conducted in the Northwestern Hawaiian Islands Marine National Monument, including Hawaiian Islands National Wildlife Refuge, the Midway Atoll National Wildlife Refuge, Battle of Midway National Memorial, Northwestern Hawaiian Islands State Marine Refuge, Kure Atoll Hawaii State Seabird Sanctuary, and the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve. The Co-Trustees are required to determine that issuing the requested permit is compatible with the findings of Presidential Proclamation 8031. Within this Application, please provide all information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historical and cultural resources of the NWHI Marine National Monument (Monument).*

### **Summary Information**

**Applicant name:**

Dr. David W. Johnston

**Permit categories:**

- ☒ Research – Please fill out Sections A-D (as applicable) and Appendix A
- ☐ Conservation and Management - Please fill out Sections A-D (as applicable) and Appendix A
- ☐ Education - Please fill out Sections A-D (as applicable) and Appendix B
- ☐ Native Hawaiian Practices - Please fill out Sections A-D (as applicable) and Appendix C
- ☐ Recreation (Midway ONLY) - Please fill out Sections A-D (as applicable) and Appendix D
- ☐ Special Ocean Use - Please fill out Sections A-D (as applicable) and Appendix E

**Briefly describe permit activity:**

Cetacean research activities in the Northwestern Hawaiian Islands

- ☒ This application is for a RENEWAL of an existing permitted project.
- ☒ This application is for a NEW project.

**When will the activity take place?**

From: February 14 2008 To: March 10 2008

**NOTE: INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED**

Please Send Permit Applications to:

NWHI Marine National Monument Permit Coordinator

6600 Kalaniana'ole Hwy. # 300

Honolulu, HI 96825

[nwhipermit@noaa.gov](mailto:nwhipermit@noaa.gov)

PHONE: (808) 397-2660 FAX: (808) 397-2662

**NOTE: SUBMITTAL VIA ELECTRONIC MAIL IS PREFERRED BUT NOT REQUIRED. FOR ADDITIONAL SUBMITTAL INSTRUCTIONS, PLEASE SEE PG 7.**

**Section A - Applicant Information**

**1. Applicant**

Name (last, first, middle initial): Johnston, Dr. David W.

Title: Leader, Cetacean Research Unit, Pacific Islands Fisheries  
Science Center

**2. Mailing address (street/P.O. box, city, state, country, zip):** 2570 Dole St., Honolulu, HI  
96822

Phone: 808 983 5398

Fax: 808 983 2902

Email: dave.johnston@noaa.gov

For students, major professor's name, telephone and email address:

**3. Affiliation (institution/agency/organization directly related to the proposed project):**  
National Marine Fisheries Service, Pacific Islands Fisheries Science Center and Joint Institute  
for Marine and Atmospheric Research, University of Hawaii & Joint Institute for Marine and  
Atmospheric Research, University of Hawaii at Manoa

**4. Additional persons to be covered by permit:**

TBN - Additional members of the field team will be provided to the Monument as soon as we  
have confirmation of their participation.

Marie Chapla  
Joint Institute for Marine and Atmospheric Research, University of Hawaii & Pacific Islands  
Fisheries Science Center, NOAA Fisheries, DOC  
T: 808-983-5339  
E: marie.chapla@noaa.gov



## **Section B: Project Information**

### **5a. Project location(s):**

- |  |                                     |   |
|--|-------------------------------------|---|
| <input checked="" type="checkbox"/> Nihoa Island                 | <input type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Ocean-based |
| <input checked="" type="checkbox"/> Necker Island (Mokumanamana) | <input type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Ocean-based |
| <input checked="" type="checkbox"/> French Frigate Shoals        | <input type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Ocean-based |
| <input checked="" type="checkbox"/> Gardner Pinnacles            | <input type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Ocean-based |
| <input checked="" type="checkbox"/> Maro Reef                    |                                     |   |
| <input checked="" type="checkbox"/> Laysan Island                | <input type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Ocean-based |
| <input checked="" type="checkbox"/> Lisianski Island, Neva Shoal | <input type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Ocean-based |
| <input checked="" type="checkbox"/> Pearl and Hermes Atoll       | <input type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Ocean-based |
| <input checked="" type="checkbox"/> Midway Atoll                 | <input type="checkbox"/> Land-based | <input checked="" type="checkbox"/> Ocean-based |
| <input type="checkbox"/> Kure Atoll                              | <input type="checkbox"/> Land-based | <input type="checkbox"/> Ocean-based            |
| <input checked="" type="checkbox"/> Other                        |                                     |   |

NOTE: Please note there is a fee schedule for people visiting Midway Atoll National Wildlife Refuge via vessel and aircraft.

### **Location Description:**

Cetacean research will be conducted at the following locations:

While underway during transits between Honolulu and Ladd Seamount during monk seal foraging camp deployments.

In the region surrounding the summit of Ladd Seamount located at approximately -W-176.67 & N28.49 The Ladd Seamount portion of the project would be renewed as we have had the instrument there for 1 yr.

### **5b. Check all applicable regulated activities proposed to be conducted in the Monument:**

- ☒ Removing, moving, taking, harvesting, possessing, injuring, disturbing, or damaging any living or nonliving monument resource
- ☒ Drilling into, dredging, or otherwise altering the submerged lands other than by anchoring a vessel; or constructing, placing, or abandoning any structure, material, or other matter on the submerged lands
- ☐ Anchoring a vessel
- ☐ Deserting a vessel aground, at anchor, or adrift
- ☐ Discharging or depositing any material or matter into the monument
- ☐ Touching coral, living or dead
- ☐ Possessing fishing gear except when stowed and not available for immediate use during passage without interruption through the monument
- ☐ Attracting any living monument resource
- ☐ Sustenance fishing (Federal waters only, outside of Special Preservation Areas, Ecological Reserves and Special Management Areas)
- ☐ Subsistence fishing (State waters only)
- ☐ Swimming, snorkeling, or closed or open circuit SCUBA diving within any Special Preservation Area or Midway Atoll Special Management Area

**6. Purpose/Need/Scope *State purpose of proposed activities:***

There are over 20 species of cetaceans inhabiting the waters of the Hawaiian Archipelago, the majority of which are poorly studied, if studied at all, within the Northwestern Hawaiian Islands. This includes several species currently listed as Endangered under the Endangered Species Act or as strategic stocks under the Marine Mammal Protection Act.

Surveys of cetaceans have occurred almost exclusively in and around the Main Hawaiian Islands and a single NMFS large vessel cruise in 2002 remains the only comprehensive survey effort for pelagic cetaceans in the NWHI. An abbreviated cetacean research cruise during March/April 2007 in the Monument identified for the first time that humpback whales use significant portions of the shallow regions as wintering habitat.

**Purpose:** The primary purpose of the cetacean research to be conducted during the proposed cruise is to gather information on the abundance, stock structure and distribution of cetaceans in the Northwestern Hawaiian Islands including studies to better understand the biology of humpbacks wintering in the Monument. A secondary purpose of the proposed cruise is to further assess the utility of deploying passive acoustic recorders within offshore portions of the Monument to monitor the presence of cetaceans, ship traffic and fishing activities.

**Need:** This research is required to meet stock assessment mandates as set out under the U.S. MMPA, where NMFS is responsible for conducting quantitative population assessments for each stock of cetaceans inhabiting the waters of the U.S. EEZ. This includes large vessel visual/acoustic line transect surveys for pelagic cetaceans, ship-based ecosystem observations to provide an ecological context for cetacean sightings and capture/recapture photo-identification studies of pelagic cetaceans including humpbacks wintering in the Monument. As well, this research will gather baseline information on the presence and seasonality of cetaceans within the newly formed Papahānaumokuākea Marine National Monument through passive acoustics. These data will be integral for managing human effects on cetaceans within the Monument. Finally, due to the remote nature of the Monument, monitoring for unpermitted/unregulated ship and fishing vessel traffic. This cruise will provide further information on how useful passive acoustics are for monitoring ship traffic in the offshore regions of the Monument.

**Scope:** The temporal scope of the research to be conducted within the waters of the Papahānaumokuākea Marine National Monument during the cruise is specified below. The geographic scope of the research is limited to the area visually and acoustically surveyed (within 10km of the ship's trackline) during large vessel surveys,

**7. As explained further in the instructions, please provide any information that you believe will assist the Co-Trustees in determining how your proposed activities are compatible with the conservation and management of the natural, historical and cultural resources of the Monument:**

The cetacean research proposed for this cruise will pose no threats to the ecological integrity of the Monument and can be conducted safely, for both humans and animals. Indeed, very little is known about the seasonality of cetaceans within the Monument, including endangered species

such as blue whales, fin whales, sperm whales and north Pacific right whales. Indeed, research conducted in the Monument last season identified the presence of breeding humpbacks in Monument waters. This research will provide valuable information for the future management human activities within the Monument and is consistent with Presidential Proclamation 8031 and the President's Ocean Action Plan.

Considering the lack of knowledge regarding cetaceans in the NWHI, and the current needs for remote vessel monitoring within the Monument, there are no practical alternatives to conducting this research outside of the Monument.

The Chief Scientist and cetacean research PI (Johnston) is highly qualified to conduct and complete the proposed research activities. Dr. Johnston has significant expertise in both small boat and large ship cetacean surveys (and has published several papers on these topics in the primary literature) and has acted as Chief Scientist or Cruise Leader on several NOAA cruises as well as on cruises conducted aboard research vessels run by academic institutions. The cruise is fully funded. All proposed cetacean research activities have been conducted successfully on previous occasions in locations inside and outside of the Monument. Dr. Johnston also has a solid track record for publishing findings from cruise-related research. For example, a peer-reviewed paper presenting the results of the previous cruise within the Monument has already been published in the primary literature.

The proposed research will not occur in the vicinity of any known western or Native Hawaiian archaeological sites within the Monument, and thus are unlikely to impact any such resources.

Because of the close relationship between Native Hawaiians and the ocean, the cetaceans of the NWHI constitute a living cultural resource whose well-being is integral to the perpetuation of cultural values and practices. Whales and dolphins are of great cultural significance to Native Hawaiians, yet most Hawaiians know little about them because of their remote habitats and cryptic behaviors. The proposed research program to characterize and monitor the Monument's living cetacean resources will directly inform traditional managers and Native Hawaiian practitioners of the distribution and abundance of these resources within the Monument. This information may assist in the evaluation (from both biological and cultural perspectives) of all future permit applications for proposed activities Monument waters. The line transect/distance sampling approach will provide data useful to develop Monument-wide estimates of cetacean abundance and mark/recapture techniques for humpback whales will greatly inform ongoing projects aiming to estimate the abundance of North Pacific humpbacks at basin-scales. These population assessment approaches will help provide rigorous evaluation of the potential impacts of any future extractive or consumptive activities within the Monument, including scientific effects and those arising from military operations. This will ensure that these and other activities are conducted in a manner that is consistent the long-term sustainability of cultural practices that are dependent upon abundant, healthy marine resources.

Finally, all scientists participating in this cruise will receive a cultural briefing before departure. In addition, the primary permittee, chief scientist, and other appropriate personnel will consult with the Office of Hawaiian Affairs (OHA) and the Monument's Native Hawaiian program coordinator on proper conduct while in the NWHI, on cultural sensitivities associated with the

proposed activities and locations, and on the applicability of the results of this research to the role of OHA as one of the NWHI management agencies.

## **8. Procedures:**

**Large Vessel Surveys:** Data are collected during research vessel surveys using line-transect methodology for the estimation of population abundance by species/stock. The following methods (including the configuration of the large vessel observation platform) are designed to match those used by the Southwest Fisheries Science Center Protected Resources Division to maximize the comparability of scientific data collected by both Centers, which have overlapping responsibilities for cetacean research in the Pacific.

In general, the following protocol is used on PIFSC research vessel surveys. The vessel traverses predetermined tracklines within the study area at a constant speed (usually 10 knots). Marine mammal observers stationed on the flying bridge deck of the vessel search the area from directly ahead to abeam of the ship using pedestal-mounted 25X150 binoculars. Data on sea state, visibility, glare, observer, etc. are recorded at regular intervals for subsequent distance sampling analysis. At times, depending on the species sighted and the data collecting priorities at the time, the vessel may turn off the trackline and approach marine mammals to confirm species identification and to make group size estimates. Concurrent with these visual observations, small boats may be launched to collect biological samples (skin/blubber biopsy or sloughed skin or feces) and digital photographs (skin/blubber biopsy samples and photographs may also be collected from the main vessel). Typically, synoptic acoustic monitoring using an acoustic array towed behind the large vessel will be used to aid in detection, localization and identification of cetaceans.

Concurrent ecosystem sampling will be conducted with expendable bathythermograph (XBT) probes (in offshore waters only), conductivity-temperature depth (CTD) casts, additionally equipped with a Seapoint profiling fluorometer, a Biospherical Instruments scalar irradiance (PAR) sensor, redundant dissolved oxygen sensors, and a 10- Niskin water bottle carousel rosette sampler. Sea surface temperature and salinity measurements will be collected using a hull-mounted thermosalinograph (TSG) continuously throughout the sampling regime. Acoustic surveys measuring biological backscatter and current velocity and direction will be conducted simultaneously along transect lines using a Simrad EK60 echosounder system and an acoustic Doppler current profiler (ADCP), respectively.

Small boat Surveys occur daily for the duration of the project (weather permitting). Data on the location, species, group size and behavior of small cetaceans are collected during each encounter by two observers. Survey tracklines will not be static nor developed a priori, but rather “bumbling” surveys. Photo ID and biopsy samples will be collected during each small boat survey as outlined below.

Photo-identification activities are primarily conducted from small boats. When photographs are taken from boats with Digital Single Lens Reflex (DSLR) cameras and telephoto zoom lenses, the animals will be approached closely enough to optimize photographic quality (i.e., well-focused images, utilizing at least one half of the frame where possible). These activities could result in Level B harassment. Distance for optimal approach varies with the species being

photographed. Generally, large whales will be approached within approximately 15-20 m. Smaller animals, such as delphinids, will be approached within approximately 5-10 m. Photographs of bow-riding animals will also be taken on an opportunistic basis from large or small vessels and these animals will approach the vessel on their own. These photographs will be used to estimate abundance, document movements, scarring rates and in some cases (e.g., spinner dolphins) estimate vital parameters such as survival and calving rates. Photo-identification studies are expected to be most useful for island-associated (or otherwise localized) stocks and migratory species exhibiting site fidelity. They are also used for stock identification. Photo-identification of adult and juvenile males and females will occur. If the opportunity arises, females accompanied by calves may be approached for photo-identification, but efforts will cease immediately if there is any evidence that the activity may be interfering with pair bonding, nursing, reproduction, feeding or other vital functions.

Cetacean biological sample collection will occur opportunistically during small-boat and large-vessel surveys using biopsy sampling (skin/blubber collected by projectile dart) or collection of sloughed skin or feces. No known serious injuries or other significant effects of this sampling have been observed during the two decades that SWFSC/PIFSC has conducted this type of sampling. Contact with the animals will be limited to approximately 45 minutes during this activity. During any single encounter, no more than five biopsy sample attempts per individual will be made. If signs of harassment such as extreme rapid changes in direction, prolonged avoidance through diving and other behaviors are observed from an individual or a group, the biopsy activities will be discontinued on that individual or group. The animals to be sampled will either approach the vessel on their own, be approached by the main research vessel during normal survey operations, or be approached by a small boat deployed from the main vessel. The projectile biopsy sample will be collected from animals within approximately 5 to 30m of the bow of the vessel or small boat (Palsbøll et al. 1991). For small cetaceans, the tissue sampled is a small plug of skin and blubber, approximately 5 to 7mm in diameter and 10 to 20mm long. It is collected from the area behind the blowhole and in front of or behind the dorsal fin using a crossbow and cetadart bolts, or darts fired from a PAXARMS rifle. The depth of the biopsy tip is controlled by a cushioned foam stop (25mm in diameter). For large cetaceans, small samples (<1 gram) will be obtained from free-ranging individuals using a using a crossbow and biopsy darts with a stainless steel tip measuring approximately 4 cm in length with an external diameter of 9mm and is fitted with a 2.5 cm stop to ensure recoil and prevent deeper penetration. Between sample periods, the biopsy tips are thoroughly cleaned and sterilized with bleach. Biological samples may be collected from adults and juveniles but not calves.

High frequency acoustic recording package (HARP) re-deployment will occur at or near the summit of Ladd Seamount in 100 to 400m of water (location detailed above). These devices have an extremely high sampling rate (up to 200 kHz) along with large data storage capacity (over 1 terabyte of data storage) and an extremely long deployment life (over a year). The package will be deployed over the side of the ship. Communications with the HARP are conducted through an acoustic modem. The unit is recovered at the surface by triggering an acoustic release to drop ballast (4 metal plates) and will be recovered on a subsequent cruise. Recordings of cetacean sounds will be examined to provide details on when marine mammals are proximate to Ladd Seamount, as well as assessing the effects of time of day and season on cetacean calling rates in the region. Analysis will be conducted with a variety of software packages designed for acoustic

analysis (e.g. Raven from Cornell University) as well as MATLAB routines for automatically identifying species of cetaceans.

## **Section C: Logistics**

### **9. Other permits (list and attach documentation of all other related Federal or State permits):**

Cetacean monitoring and sampling is authorized by ESA / MMPA Scientific Research Permits 782-1719 and 774-1714. Copies of these are attached and/or forwarded by mail.

### **9a. For each of the permits listed, please identify any permit violations or any permit that was suspended, amended, modified or revoked for cause. Please explain the circumstances surrounding the violation or permit suspension, amendment, modification or revocation.**

NA

### **10. Funding sources (Please attach copies of your budget, specific to proposed activities under this permit and include funding sources. Please see instructions for more information):**

All funding from Department of Commerce – NOAA Fisheries.

### **11. Time frame:**

Activity start: February 14, 2008

Activity completion: March 10, 2008

Dates actively inside the Monument:

From: February 15, 2008

To: March 09, 2008

Please describe any limiting factors in declaring specific dates of the proposed activity at the time of application:

All research is subject to ship delays due to personnel or equipment problems.

Personnel schedule in the Monument:

All cetacean research activities will be conducted before, during and after the deployment of monk seal researchers studying the foraging ecology of monk seals in the NWHI. This includes during transits along the chain, while researchers are deployed at monk seal camps and during he transits back. Please see concurrent monk seal application for basic ship schedule.

### **12. Please indicate (with attached documentation) what insurance policies, bonding coverage, and/or financial resources are in place to pay for or reimburse the Monument trustees for the necessary search and rescue, evacuation, and/or removal of any or all persons covered by the permit from the Monument:**

### **13. Please check the appropriate box to indicate how personnel will enter the Monument:**

☒ Vessel  
☐ Aircraft

Provide Vessel and Aircraft information:  
OSCAR ELTON SETTE

**14. What certifications/inspections do you have scheduled for your vessel? Please fill in scheduled date (attach documentation):**

☐ Rodent free, Date:  
☐ Tender vessel, Date:  
☐ Ballast water, Date:  
☐ Gear/equipment, Date:  
☐ Hull inspection, Date:

**15. Vessel information (NOTE: if you are traveling aboard a National Oceanic and Atmospheric Administration vessel, skip this question):**

Vessel name:  
Vessel owner:  
Captain's name:  
IMO#:  
Vessel ID#:  
Flag:  
Vessel type:  
Call sign:  
Embarkation port:  
Last port vessel will have been at prior to this embarkation:  
Length:  
Gross tonnage:  
Total ballast water capacity volume (m3):  
Total number of ballast water tanks on ship:  
Total fuel capacity:  
Total number of fuel tanks on ship:  
Marine Sanitation Device:  
Type :

How will you comply with the 'No Discharge' regulations stipulated in Presidential Proclamation 8031? Describe in detail. If applicable, please attach schematics of the vessel's discharge and treatment systems:

Other fuel/hazardous materials to be carried on board and amounts:

Please provide proof of a National Oceanic and Atmospheric Administration (NOAA) Office of Law Enforcement-approved Vessel Monitoring System (VMS). Please provide the name and contact information of the contractor responsible for installing the VMS system. Please also describe unit name and type:

VMS Email:

Inmarsat ID#:

**16. Tender information:**

On what workboats (tenders) will personnel, gear and materials be transported within the Monument? Please list the number of tenders/skiffs aboard and specific types of motors:



## **Section D: Additional Information for Land Based Operations**

**17. Proposed movement of personnel, gear, materials, and, if applicable, samples:**

**18. Room and board requirements on island:**

**19. Work space needs:**

With knowledge of the penalties for false or incomplete statements, as provided by 18 U.S.C. 1001, and for perjury, as provided by 18 U.S.C. 1621, I hereby certify to the best of my abilities under penalty of perjury of that the information I have provided on this application form is true and correct.

---

Signature

Date

**PLEASE SEND ONE SIGNED APPLICATION VIA MAIL TO THE MONUMENT OFFICE BELOW:**

NWHI Marine National Monument Permit Coordinator  
6600 Kalaniana'ole Hwy. # 300  
Honolulu, HI 96825  
FAX: (808) 397-2662

### **DID YOU INCLUDE THESE?**

- ☐ Applicant CV/Resume/Biography
- ☐ Electronic and Hard Copy of Application with Signature
- ☐ Map(s) or GPS point(s) of Project Location(s), if applicable
- ☐ Funding Proposal(s)
- ☐ Funding and Award Documentation, if already received
- ☐ Documentation of Insurance, if already received
- ☐ Documentation of Inspections
- ☐ Documentation of all required Federal and State Permits or applications for permits
- ☐ Statement of information you wish to be kept confidential

## **Appendix A: Research OR Conservation and Management Application**

**NOTE: If land or marine archeological activities are involved, please contact the Monument Permit Coordinator at the address on the general application form before proceeding, as a customized application will be needed. For more information, please contact the Monument office on the first page of this application.**

1a. Collection of specimens - collecting activities (would apply to any activity): organisms or objects (List of species, if applicable, attach additional sheets if necessary):

Common name	Scientific name	# biopsy samples	MMPA / ESA status	CITES Appendix
Rough-toothed dolphin	<i>Steno bredanensis</i>	50		II
Risso's dolphin	<i>Grampus griseus</i>	50		II
Bottlenose dolphin	<i>Tursiops truncatus</i>	50		II
Pantropical spotted dolphin	<i>Stenella attenuata</i>	50		II
Spinner dolphin	<i>Stenella longirostris</i>	10		II
Striped dolphin	<i>Stenella coeruleoalba</i>	50		II
Fraser's dolphin	<i>Lagenodelphis hosei</i>	50		II
Melon-headed whale	<i>Peponocephala electra</i>	50		II
Pygmy killer whale	<i>Feresa attenuata</i>	50		II
False killer whale <sup>1</sup>	<i>Pseudorca crassidens</i>	50		II
Killer whale	<i>Orcinus orca</i>	50		II
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	50		II
Blainville's beaked whale	<i>Mesoplodon densirostris</i>	50		II
Cuvier's beaked whale	<i>Ziphius cavirostris</i>	50		II
Longman's beaked whale	<i>Indopacetus pacificus</i>	50		II
Pygmy sperm whale	<i>Kogia breviceps</i>	50		II
Dwarf sperm whale	<i>Kogia sima</i>	50		II
Sperm whale	<i>Physeter macrocephalus</i>	50	D / E	I
Blue whale	<i>Balaenoptera musculus</i>	50	D / E	I
Fin whale	<i>Balaenoptera physalus</i>	50	D / E	I
Sei whale	<i>Balaenoptera borealis</i>	50	D / E	I
Minke whale	<i>Balaenoptera acutorostrata</i>	50		I
Bryde's whale	<i>Balaenoptera edeni</i>	50		I
North Pacific right whale	<i>Eubalaena japonica</i>	10	D / E	I
Humpback whale	<i>Megaptera novaeangliae</i>	50	D / E	I

<sup>1</sup>The Hawaii stock is not listed as endangered, threatened nor depleted, but is considered strategic under MMPA as estimated total annual human caused mortality and serious injury exceeds PBR.

# & size of specimens:

See above. We expect to collect between 5 and 100 biopsies on the cruise, but cannot predetermine how many of each species will be collected due to the nature of cetacean encounters. As an example, we applied for the same number of samples in last years Monument permit and collected only 2 biopsy samples in Monument waters.

Collection location:

Pacific Islands Fisheries Science Center

☐ Whole Organism ☒ Partial Organism

**1b. What will be done with the specimens after the project has ended?**

Samples will be archived in two locations - the Pacific Islands Fisheries Science Center and Southwest Fisheries Science Center (federal permit requirements specify this). Specimens will be studied for genetics, stable isotopes and fatty acids as required by science and management needs for cetaceans in the Monument.

**1c. Will the organisms be kept alive after collection?** ☐ Yes ☒ No

- Specific site/location:
- Is it an open or closed system? ☐ Open ☐ Closed
- Is there an outfall? ☐ Yes ☐ No
- Will these organisms be housed with other organisms? If so, what are the other organisms?
- Will organisms be released?

**2. If applicable, how will the collected samples or specimens be transported out of the Monument?**

**3. Describe collaborative activities to share samples, reduce duplicative sampling, or duplicative research:**

There are limited cetacean research programs ongoing in the NWHI. Where these are underway (e.g. spinner dolphin research at Midway), we have ongoing collaborations with those researchers, included in the list below. However, we have several partners aiding us in the analysis of our samples and data. These include: Bishop Museum, University of Hawaii Manoa and Hilo, UH Hawaii Institute of Marine Biology, Southwest Fisheries Science Center, Scripps Institute of Oceanography and Dalhousie University, Canada.

**4a. Gear and materials:**

A detailed list of gear and materials being brought into the NWHI Monument is included at the end of this permit.

**4b. Please list all Hazardous Materials you propose to take to and use within the Monument:**

A detailed list of hazmat being brought into the NWHI Monument is included at the end of this permit

**5. Fixed installations and instrumentation:**

No fixed installations will be used in these studies.

**6. Provide a time line for sample analysis, data analysis, write-up and publication of information:**

Sample analysis and data analysis will be conducted ASAP. Some specimens will be afforded priority given the needs of the agency.

**7. List all publications directly related to the proposed project:**

Andrews, K.R., Karczmarski, L., Au, W.L., Rickards, S.H., Vanderlip, C.A., Toonen, R.J., 2006. Patterns of genetic diversity of the Hawaiian spinner dolphin (*Stenella longirostris*). Atoll Research Bulletin, No. 543: 65-73. Atoll Research Bulletin, 65-73.

Barlow, J., 2006. Cetacean abundance in Hawaiian waters estimated from a summer/fall survey in 2002. Marine Mammal Science 22, 446-464.

Johnston, D.W., Chapla, M.E., Williams, L.E., Mattila, D.K., 2007. Identification of humpback whale *Megaptera novaeangliae* wintering habitat in the Northwestern Hawaiian Islands using spatial habitat modeling. Endangered Species Research 3, 249-257.

Karczmarski, L., Wursig, B., Gailey, G., Larson, K.W., Vanderlip, C., 2005. Spinner dolphins in a remote Hawaiian atoll: social grouping and population structure. Behavioral Ecology 16, 675-685.

Reeves, R.R., Read, A.J., Johnston, D.W. eds., 2006. Report of the Workshop on the Research Needs for the Conservation and Management of Cetaceans in the Pacific Islands Region. NOAA Fisheries, Pacific Islands Fisheries Science Center, Honolulu, HI.

**DID YOU INCLUDE THESE?**

☒ Material Safety Data Sheets for Hazardous Materials

## **Appendix B: Education Application**

- 1. Are you collaborating with others in any way to reduce duplicative activities in the Monument or elsewhere?**
- 2. Gear and materials:**
- 3. Fixed installations and instrumentation:**
- 4. Is your proposed activity based on a State Department of Education Standards Based Curriculum? If so, please describe:**
- 5. What materials, products or deliverables will be developed as a result of your proposed activity? Provide a time line for write-up and publication of information or production of educational materials:**
- 6. List all publications/references directly related to the proposed project:**
- 7a. Collection of specimens - collecting activities (would apply to any activity): organisms or objects (List of species, if applicable, attach additional sheets if necessary):**

Common name:

Scientific name:

# & size of specimens:

Collection location:

☐ Whole Organism   ☐ Partial Organism

- 7b. What will be done with the specimens after the project has ended?**

**7c. Will the organisms be kept alive after collection?** ☐ Yes ☐ No

- Specific site/location:

- Is it an open or closed system? ☐ Open ☐ Closed

- Is there an outfall? ☐ Yes ☐ No

- Will these organisms be housed with other organisms? If so, what are the other organisms?

- Will organisms be released?

**8. If applicable, how will the collected samples be transported out of the Monument?**

### **Appendix C: Native Hawaiian Practices Application**

**1. Please state how the purpose and intent of the activity are appropriate and deemed necessary by traditional standards in the Native Hawaiian culture (pono), and demonstrate an understanding of, and background in, the traditional practice, and its associated values and protocols:**

**2. Please state how the activity benefits the resources of the Northwestern Hawaiian Islands and the Native Hawaiian community:**

**3. Please state how the activity supports or advances the perpetuation of traditional knowledge and ancestral connections of Native Hawaiians to the Northwestern Hawaiian Islands:**

**4. Will you be collecting any Monument resource? ☐ Yes ☐ No**  
**If so, please provide the following information:**

**4a. Collection of specimens - collecting activities (would apply to any activity): organisms or objects (List of species, if applicable, attach additional sheets if necessary):**

Common name and/or Scientific name:

# & size of specimens:

Collection location:

☐ Whole Organism ☐ Partial Organism

**4b. What will be done with the specimens after the Native Hawaiian cultural practice is complete?**

**4c. Will organisms be kept alive after collection? ☐ Yes ☐ No**

• Specific site/location:

• Is it an open or closed system? ☐ Open ☐ Closed

• Is there an outfall? ☐ Yes ☐ No

• Will these organisms be housed with other organisms? If so, what are the other organisms?

• Will organisms be released?

**NOTE: Any Monument resource harvested from the Monument for the purpose of Native Hawaiian practices will be consumed in the Monument.**

**5. Are you collaborating with others in any way to reduce duplicative activities in the Monument or elsewhere?**

**6. Gear and materials:**

**7. Will you erect any Native Hawaiian cultural structures or leave any offerings in the Monument?** ☐ Yes ☐ No

**If so, please describe:**

**8. Will you produce any publications, educational materials or other deliverables?**  
☐ Yes ☐ No

**Provide a time line for write-up and publication of information or production of materials:**



### **Appendix D: Recreation Application**

For Activities in the Midway Atoll Special Management Area Only

**1. Please explain how the activity is for the purpose of recreation as defined: An activity conducted for personal enjoyment that does not result in the extraction of Monument resources and that does not involve a fee-for-service transaction:**

**2. Other Associated Monument Permits:**

**3. Gear and materials:**

**4. Fixed installations and instrumentation:**

### **Appendix E: Special Ocean Use Application**

**NOTE: If this is a first time Special Ocean Use activity, it will be subject to a pilot project.**

**1. Please provide proof of general liability insurance, or indicate that you will be posting an equivalent bond against claims arising out of activities conducted under the permit:**

**2. Are you collaborating with others in any way to reduce duplicative activities in the Monument or elsewhere?**

**3. Gear and materials:**

**4. Fixed installations and instrumentation:**

**5. List all publications directly related to the proposed project:**

For projects occurring with the Midway Atoll Special Management Area answer the following questions:

**6. Please explain how your activity has been found compatible with the purposes for which the Midway Atoll National Wildlife Refuge was designated?**

**7. Please explain how your activity meets the requirement of furthering conservation and management of the Monument:**

For projects occurring outside of the Midway Atoll Special Management Area answer the following questions:

**8. Please explain how the proposed activity will directly benefit the conservation and management of the Monument:**

**9. Please explain how the purpose of the proposed activity is for research and education related to resources or qualities of the Monument:**

**NOTE: SPECIAL OCEAN USE PERMITS OUTSIDE THE MIDWAY ATOLL SPECIAL MANAGEMENT AREA DO NOT ALLOW THE USE OF A COMMERCIAL PASSENGER**

**VESSEL.** A commercial passenger vessel is defined by the monument regulations as a vessel that carries individuals who have paid for such carriage.

#### Equipment and Hazmat.

##### Equipment list:

- 3 8X25 Binoculars
- 2 25X150 Binoculars
- 3 Digital SRL Cameras w/accessories
- 3 Crossbows w/ darts and sampling tips
- 2 Video cameras w/accessories
- 1 Handheld GPS
- 4 handheld VHF radios w/accessories
- 1 towed hydrophone array system with AD converter
- 4 laptop computers for data collection, storage and analysis.

##### Hazmat list

- 5L Chlorox for cleaning biopsy tips
- 1L rubbing alcohol to sterilize biopsy tips
- 1 Liquid nitrogen dewar for sample storage

Andrews, K.R., Karczmarski, L., Au, W.L., Rickards, S.H., Vanderlip, C.A., Toonen, R.J., 2006. Patterns of genetic diversity of the Hawaiian spinner dolphin (*Stenella longirostris*). Atoll Research Bulletin, No. 543: 65-73. Atoll Research Bulletin, 65-73.

Barlow, J., 2006. Cetacean abundance in Hawaiian waters estimated from a summer/fall survey in 2002. Marine Mammal Science 22, 446-464.

Johnston, D.W., Chapla, M.E., Williams, L.E., Mattila, D.K., 2007. Identification of humpback whale *Megaptera novaeangliae* wintering habitat in the Northwestern Hawaiian Islands using spatial habitat modeling. Endangered Species Research 3, 249-257.

Karczmarski, L., Wursig, B., Gailey, G., Larson, K.W., Vanderlip, C., 2005. Spinner dolphins in a remote Hawaiian atoll: social grouping and population structure. Behavioral Ecology 16, 675-685.

Reeves, R.R., Read, A.J., Johnston, D.W. eds., 2006. Report of the Workshop on the Research Needs for the Conservation and Management of Cetaceans in the Pacific Islands Region. NOAA Fisheries, Pacific Islands Fisheries Science Center, Honolulu, HI.